

REMARKS

Reconsideration and allowance of the present patent application based on the foregoing amendments and following remarks are respectfully requested.

By this Amendment, claim 1 is amended and claims 2-4 are cancelled without prejudice or disclaimer to the subject matter therein. Support for the amendments to claim 1 may be found, for example, in the embodiments described in FIGS. 1 and 2, and at pages 6, line 25, page 9, lines 8-13, page 11, lines 18-25 and page 13, lines 10-19 of the present application. No new matter has been added. Accordingly, after entry of this Amendment, claim 1 will remain pending in the patent application.

Claim 1 was rejected under 35 U.S.C. §102(b) based on Yoshida *et al.* (U.S. Pat. No. 6,227,839) (hereinafter “Yoshida”). The rejection is respectfully traversed.

Claim 1 is patentable over Yoshida at least because this claim recites an injection apparatus comprising, *inter alia*, a planetary gear mechanism, which is located between the pulley and the screw drive shaft, adapted to reduce the speed of rotation of the pulley, and to transmit the rotation of the pulley to the screw drive shaft, wherein the planetary gear mechanism is arranged in a space surrounded by the guide bars, and has an input shaft fitted with the pulley and an output shaft connected to the screw drive shaft, the input and output shafts being situated on the extension of the axis of the screw drive shaft. Yoshida does not disclose, teach or suggest these features.

Yoshida discloses a driving device for an injection molding device that includes a driving source 5 comprising a speed reducer and a motor, and a drive shaft to which is coupled a threaded shaft 7 of a ball screw 6. (*See* FIG. 1 and col. 2, lines 45-49 of Yoshida). The driving device also includes a coupling member 9, a rotary driving source 14 that drives the screw 4 via gears 12, 13. (*See* FIG. 1 and col. 2, lines 50-62 of Yoshida). In Yoshida, the extrusion screw 4 is rotatably and axially movably supported by bearings 10 in the heating cylinder 3. *Id.*

However, unlike claim 1, Yoshida is silent as to a planetary gear mechanism, which is located between the pulley and the screw drive shaft, adapted to reduce the speed of rotation of the pulley, wherein the planetary gear mechanism is arranged in a space surrounded by the guide bars. In addition, unlike claim 1, Yoshida is silent as to a planetary gear mechanism that has an input shaft fitted with the pulley and an output shaft connected to the screw drive shaft, the input and output shafts being situated on the extension of the axis of the screw drive shaft. The only pulley disclosed by Yoshida is the one that is positioned at the front end of

the molding device drives belt 25. Furthermore, the only gear mechanism disclosed by Yoshida is the one formed by gears 12 and 13. However, as can be seen in FIG. 1 of Yoshida, gear 12 does not have an input shaft fitted with the pulley that drives belt 25. Yoshida merely discloses that the screw 4 is made with serrations 11 that are coupled to gears 12, 13 and to the rotation member 9. Thus, Yoshida's driving mechanism is significantly different from the device of claim 1 and does not include a speed reducer or planetary gear mechanism arranged between the gear 12 and the screw 4. Therefore, Yoshida does not disclose, teach or suggest each and every feature recited by claim 1 and, as a result, cannot anticipate claim 1.

Accordingly, reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §102(b) based on Yoshida are respectfully requested.

Claims 1-4 were rejected under 35 U.S.C. §102(b) or 35 U.S.C. §103(a) based on Mizuno *et al.* (U.S. Pat. No. 6,386,853) (hereinafter "Mizuno"). The rejection is respectfully traversed.

Claims 2-4 are cancelled without prejudice or disclaimer, thus rendering moot the rejection of these claims.

Claim 1 is patentable over Mizuno at least because this claim recites an injection apparatus comprising, *inter alia*, a planetary gear mechanism, which is located between the pulley and the screw drive shaft, adapted to reduce the speed of rotation of the pulley, and to transmit the rotation of the pulley to the screw drive shaft, wherein the planetary gear mechanism is arranged in a space surrounded by the guide bars, and has an input shaft fitted with the pulley and an output shaft connected to the screw drive shaft, the input and output shafts being situated on the extension of the axis of the screw drive shaft. It is respectfully submitted that these features are neither anticipated nor rendered obvious in view of Mizuno.

Mizuno discloses a motor-driven injection driving apparatus that includes a screw shaft 10 and a screw nut 11. (*See* FIG. 5 of Mizuno). The injection driving apparatus of Mizuno also includes a coupling housing 80, a planetary reduction gear 81 connected to the injection drive motor 7 via the coupling housing 80, a small pulley 68 for a toothed belt fixed to an output shaft 81a of the planetary reduction gear 81, a large pulley 69 for a toothed belt fixed to the ball screw shaft 10, and a toothed belt 72 which is set around the pulleys 68 and 69 to transmit power while reducing the speed. (*See* col. 8, lines 45-57).

However, unlike claim 1, Mizuno is silent as to a planetary gear mechanism that is arranged in a space surrounded by guide bars, and has an input shaft fitted with the pulley and an output shaft connected to the screw drive shaft, the input and output shafts being situated on the extension of the axis of the screw drive shaft. Mizuno merely discloses that the

planetary reduction gear 81 is connected to the pulley 68 and the motor 7. However, pulley 68 is not situated on an extension of an axis of the screw drive shaft 10, nor is it connected to the screw drive shaft. As such, Mizuno does not disclose, teach or suggest each and every feature recited by claim 1 and, as a result, cannot anticipate claim 1.

Furthermore, Applicants respectfully submit that Mizuno does not provide any motivation or suggestion to provide these features. The Examiner indicated that "it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to relocate the speed reducer depending on the structure of the apparatus or the position of all the parts within the apparatus". However, the Examiner has failed to provide reasons for such a determination. MPEP 2143 requires the Examiner to provide reasons, not a mere statement of conclusion.

Moreover, Applicants respectfully submit that this *post hoc* justification for the asserted modification is clearly based on an improper application of hindsight based on Applicants' own specification. There is no indication that Mizuno intends to "relocate" any part of the apparatus, much less the planetary reduction gear 81. As such, Applicants respectfully submit that there is no motivation or suggestion for the asserted modification of Von Buren.

Accordingly, reconsideration and withdrawal of the rejection of claims 1-4 under 35 U.S.C. §102(b) or 35 U.S.C. §103(a) based on Mizuno are respectfully requested.

Applicants have addressed all the Examiner's rejections and objections and respectfully submit that the application is in condition for allowance. A notice to that effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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